

09310140 / JFJH

**Preparation of strained Si/SiGe on insulator by hydrogen induced layer transfer technique**

Patent number: TW512487

Also published as:

Publication date: 2002-12-01

WO0227783 (A)

Inventor: HUANG LIJUAN (CN); CANAPERI DONALD F (US);  
CHU JACK O (US); OTT JOHN A (US); D'EMIC  
CHRISTOPHER P (US)

US6524935 (B1)

Applicant: IBM (US)

Classification:

- International: H01L21/762

- European:

Application number: TW20010123782 20010926

Priority number(s): US20000675840 20000929

BEST AVAILABLE COPY

**Abstract of TW512487**

A method for forming strained Si or SiGe on relaxed SiGe on insulator (SGOI) is described incorporating growing epitaxial Si<sub>1-y</sub>Ge<sub>y</sub> layers on a semiconductor substrate, implanting hydrogen into a selected Si<sub>1-y</sub>Ge<sub>1-y</sub> layer to form a hydrogen-rich defective layer, smoothing surfaces by Chemo-Mechanical Polishing, bonding two substrates together via thermal treatments and separating two substrates at the hydrogen-rich defective layer. The separated substrates may have its upper surface smoothed by CMP for epitaxial deposition of relaxed Si<sub>1-y</sub>Ge<sub>y</sub>, and strained Si<sub>1-y</sub>Ge<sub>y</sub> depending upon composition, strain Si, strained SiC, strained Ge, strained GeC, and strained Si<sub>1-y</sub>Ge<sub>y</sub>C.

Data supplied from the esp@cenet database - Worldwide